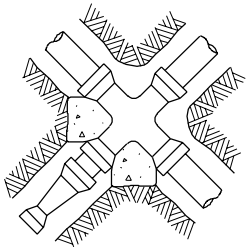
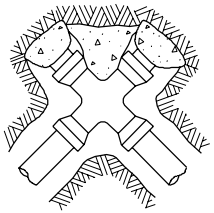
NOTES:

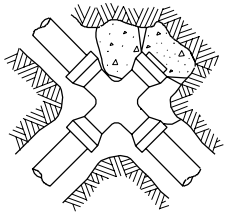
1. Contractor to provide blocking adequate to withstand full test pressure.
2. Minimum area concrete must bear against undisturbed trench wall is computed by dividing thrust by safe bearing load.
3. Areas to be adjusted for other pressure conditions.
4. Provide two 25 mm minimum diameter rods on valves up through 250 mm diameter. Valves larger than 250 mm require special tie rod design.



UNBALANCED CROSS

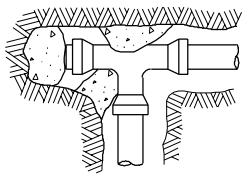


PLUGGED CROSS

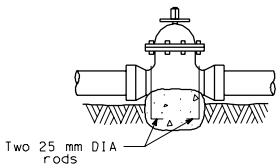


PLUGGED CROSS

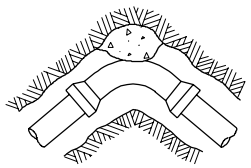
Size	Test Pressure kPa	Thrust at Fittings in Newtons				
		Tee and Dead Ends	90° Bend	45° Bend	22.5° Bend	11.25° Bend
100	1724	13967	19749	10697	5449	2736
150	1724	31447	44458	24064	12276	6160
200	1724	55889	79041	42790	21817	10964
250	1724	87336	123521	66853	34072	17125
300	1724	125767	177853	96255	49061	24664
350	1724	171181	242082	131016	66787	33560
400	1724	223579	316186	171115	87248	43835



PLUGGED TEE

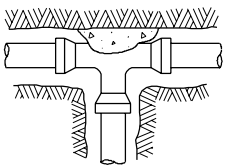


VALVE
(See Note 4)

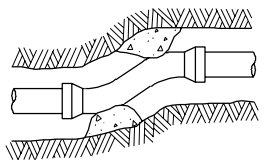


HORIZONTAL BEND

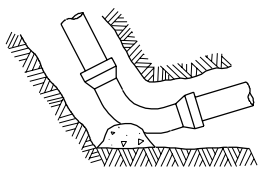
Soil Type	Safe Bearing Load kPa
Muck, peat, etc.	0
Soft clay	48
Sand	96
Sand and gravel	144
Sand and gravel cemented with clay	192
Hard shale	479



TEE



OFFSET



VERTICAL BEND

ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE NOTED

CONCRETE THRUST BLOCK

STANDARD PLAN B-22a

APPROVED FOR PUBLICATION

STATE DESIGN ENGINEER _____ DATE _____

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
OLYMPIA, WASHINGTON